

THE PURIFICATION OF GLUCOSE SYRUP FROM TAPIOCA BY USING ABSORPTION METHOD AND THE CONCENTRATION PROCESS BY VACUUM EVAPORATOR

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Abstract. The glucose syrupe production from tapioca needs to remove dirt and the colour. The water content should also be reduced. The aobjectives of this research were to identify the effectiveness of glucose syrup purification by using the combination of activated charcoal and zeolit, and to determine the optimal evaporation time on the concentration process of glucose syrup to produce high glucose syrup. The materials were tapioca, activated charcoal, and zeolit. The research was started with converting the tapioca enzymatically through liquificaitonn and saccharification processes. The resulted glucose syrup was the purified by using activated charcoal in different concentrations, i.e. 1, 2, 3, and 4 % (w/v). The mixture of glucose and activated charcoal is then flowed through a column which was filled by zeolit before. The observed parameters were purification level by spectrofotometre, reducing sugar by DNS method, and ash content. After that, the purified glucose syrup was concentrated by using vacuum evaporator. The evaporation time was varied, i.e. 30, 60, 90, 120, 150, 180, 210, and 240 minutes. It was evaluated the water content and the level of sweetness. The results showed that by using activated charcoal of 1% and then was purified by using zeolit produced the best result of purification level, which was 93.66% T. The concentration process of the glucose syrup needed three hours to obtain the best result of high glucose syrup (HGS). The resulted HGS had a water content of 54% with the sweetness level of 51 °Brix. In conclusion, the high glucose syrup could be purified by using activated charcoal 1%, then purifiying by zeolit. The concentration process was carried out by using vacuum evaporator for three hours.

Keywords: *glucose syrup, purification, activated charcoal, and zeolit*